August 2012

The summer of 2012 has brought hot temperatures, very dry conditions, and now, an increase in cases of West Nile virus. If you have been paying attention to newspapers or television news recently, you will recall that there have been a number of stories devoted to this virus. Even though there has been an increase in awareness through the media, how much does anyone actually know about the West Nile virus? In order to add to the awareness aspect, this edition of Health and Safety News seeks to provide information about this illness from information found on the CDC’s (Center for Disease Control and Prevention) website as well as links to national news outlets and local news stations.

Note: For reading more about a topic highlighted/underlined in blue, right click and select Open Hyperlink.

Don’t take just what is found in this issue as being all there is to know about West Nile virus. I encourage more reading so that you can protect yourself, family, and friends.
A Little West Nile Virus History…

Aug 23, 1999:

NYC reports first cases of West Nile virus

The first cases of an encephalitis outbreak are reported in New York City on this day in 1999 (August 23). Seven people die from what turns out to be the first cases of West Nile virus in the United States.

A cluster of eight cases of St. Louis encephalitis was diagnosed among patients in the borough of Queens in New York City in August 1999. The sudden cases of critical brain swelling were found exclusively among the elderly. At about the same time, people noticed an inordinate number of dead crows throughout the city. Other birds, including exotic varieties housed at the Bronx Zoo, were also found dead.

The Center for Disease Control (CDC) was called in to investigate. They found that the West Nile virus, previously found only in Uganda and the Middle East, had been contracted by birds throughout the area, including robins, ducks and eagles. In addition to birds and humans, horses have also been known to be susceptible to the virus, which is spread by mosquitoes.

Upon further investigation, the victims thought to have had St. Louis encephalitis had actually had been infected with West Nile. It causes flu-like symptoms and can be deadly in both the elderly and small children. By the end of the summer, there were 56 confirmed cases of West Nile in New York, though the CDC estimates that 80 percent of people infected with West Nile show no symptoms and therefore would not seek medical help.

In subsequent years, the West Nile virus moved steadily westward across the United States.

Source: History.com (http://www.history.com/this-day-in-history/nyc-reports-first-cases-of-west-nile-virus)
West Nile Virus General Information from the CDC (http://www.cdc.gov/ncidod/dvbid/westnile/wnv_factSheet.htm)...

West Nile Virus: What You Need To Know

CDC Fact Sheet

What Is West Nile Virus?

West Nile virus (WNV) is a potentially serious illness. Experts believe WNV is established as a seasonal epidemic in North America that flares up in the summer and continues into the fall. This fact sheet contains important information that can help you recognize and prevent West Nile virus.

What Can I Do to Prevent WNV?

Prevention measures consist of community-based mosquito control programs that are able to reduce vector populations, personal protection measures to reduce the likelihood of being bitten by infected mosquitoes, and the underlying surveillance programs that characterize spatial/temporal patterns in risk that allow health and vector control agencies to target their interventions and resources.

The easiest and best way to avoid WNV is to prevent mosquito bites.

- When you are outdoors, use insect repellent containing an EPA-registered active ingredient. Follow the directions on the package.
- Many mosquitoes are most active at dusk and dawn. Be sure to use insect repellent and wear long sleeves and pants at these times or consider staying indoors during these hours.
- Make sure you have good screens on your windows and doors to keep mosquitoes out.
- Get rid of mosquito breeding sites by emptying standing water from flower pots, buckets and barrels. Change the water in pet dishes and replace the water in bird baths weekly. Drill holes in tire swings so water drains out. Keep children's wading pools empty and on their sides when they aren't being used.

What Are the Symptoms of WNV?

- **Serious Symptoms in a Few People.** About one in 150 people infected with WNV will develop severe illness. The severe symptoms can include high fever, headache, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, vision loss, numbness and paralysis. These symptoms may last several weeks, and neurological effects may be permanent.

- **Milder Symptoms in Some People.** Up to 20 percent of the people who become infected have symptoms such as fever, headache, and body aches, nausea, vomiting, and sometimes swollen lymph glands or a skin rash on the chest, stomach and back. Symptoms can last for as short as a few days, though even healthy people have become sick for several weeks.
• **No Symptoms in Most People.** Approximately 80 percent of people (about 4 out of 5) who are infected with WNV will not show any symptoms at all.

**How Does West Nile Virus Spread?**

• **Infected Mosquitoes.** Most often, WNV is spread by the bite of an infected mosquito. Mosquitoes become infected when they feed on infected birds. Infected mosquitoes can then spread WNV to humans and other animals when they bite.

• **Transfusions, Transplants, and Mother-to-Child.** In a very small number of cases, WNV also has been spread through blood transfusions, organ transplants, breastfeeding and even during pregnancy from mother to baby.

• **Not through touching.** WNV is not spread through casual contact such as touching or kissing a person with the virus.

**How Soon Do Infected People Get Sick?**

People typically develop symptoms between 3 and 14 days after they are bitten by the infected mosquito.

**How Is WNV Infection Treated?**

There is no specific treatment for WNV infection. In cases with milder symptoms, people experience symptoms such as fever and aches that pass on their own, although even healthy people have become sick for several weeks. In more severe cases, people usually need to go to the hospital where they can receive supportive treatment including intravenous fluids, help with breathing and nursing care.

**What Should I Do if I Think I Have WNV?**

Milder WNV illness improves on its own, and people do not necessarily need to seek medical attention for this infection though they may choose to do so. If you develop symptoms of severe WNV illness, such as unusually severe headaches or confusion, seek medical attention immediately. Severe WNV illness usually requires hospitalization. Pregnant women and nursing mothers are encouraged to talk to their doctor if they develop symptoms that could be WNV.

**What Is the Risk of Getting Sick from WNV?**

• **People over 50 at higher risk to get severe illness.** People over the age of 50 are more likely to develop serious symptoms of WNV if they do get sick and should take special care to avoid mosquito bites.

• **Being outside means you're at risk.** The more time you're outdoors, the more time you could be bitten by an infected mosquito. Pay attention to avoiding mosquito bites if you spend a lot of time outside, either working or playing.

• **Risk through medical procedures is very low.** All donated blood is checked for WNV before being used. The risk of getting WNV through blood transfusions and organ transplants is very small, and should not prevent people who need surgery from having it. If you have concerns, talk to your doctor.
Pregnancy and nursing do not increase risk of becoming infected with WNV.

The risk that WNV may present to a fetus or an infant infected through breastmilk is still being evaluated. Talk with your care provider if you have concerns.

What Is the CDC Doing About WNV?

CDC is working with state and local health departments and other government agencies, as well as private industry, to prepare for and prevent new cases of WNV.

Some things CDC is doing include:

- Manage and maintain ArboNET, a nation-wide electronic surveillance system where states share information about WNV and other arboviral diseases
- Support states develop and carry out improved mosquito prevention and control programs
- Developing better, faster tests to detect and diagnose WNV
- Prepare updated prevention and surveillance information for the media, the public, and health professionals
- Working with partners on the development of vaccines

What Else Should I Know?

If you find a dead bird: Don't handle the body with your bare hands. Contact your local health department for instructions on reporting and disposing of the body. They may tell you to dispose of the bird after they log your report.

For more information call the CDC public response hotline at (888) 246-2675 (English), (888) 246-2857 (Español), or (866) 874-2646 (TTY)

Page last reviewed: August 2, 2012
Page last updated: August 7, 2012
Content source: Centers for Disease Control and Prevention
National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)

Updated Information regarding Insect Repellents

Repellents are an important tool to assist people in protecting themselves from mosquito-borne diseases.

CDC recommends the use of products containing active ingredients which have been registered by the U.S. Environmental Protection Agency (EPA) for use as repellents applied to skin and clothing. EPA registration of repellent active ingredients indicates the materials have been reviewed and approved for efficacy and human safety when applied according to the instructions on the label.

Repellents for use on skin and clothing:

CDC evaluation of information contained in peer-reviewed scientific literature and data available from EPA has identified several EPA registered products that provide repellent activity sufficient to help
people avoid the bites of disease carrying mosquitoes. Products containing these active ingredients typically provide reasonably long-lasting protection:

- **DEET** (Chemical Name: N,N-diethyl-m-toluamide or N,N-diethly-3-methyl-benzamide)
- **Picaridin** (KBR 3023, Chemical Name: 2-(2-hydroxyethyl)-1-piperidinecarboxylic acid 1-methylpropyl ester)
- **Oil of Lemon Eucalyptus** or **PMD** (Chemical Name: para-Menthane-3,8-diol) the synthesized version of oil of lemon eucalyptus
- **IR3535** (Chemical Name: 3-[N-Butyl-N-acetyl]-aminopropionic acid, ethyl ester)

EPA characterizes the active ingredients DEET and Picaridin as “conventional repellents” and Oil of Lemon Eucalyptus, PMD, and IR3535 as “biopesticide repellents”, which are derived from natural materials. For more information on repellent active ingredients see (http://www.epa.gov/pesticides/health/mosquitoes/ai_insectrp.htm).

Published data indicate that repellent efficacy and duration of protection vary considerably among products and among mosquito species and are markedly affected by ambient temperature, amount of perspiration, exposure to water, abrasive removal, and other factors.

In general, higher concentrations of active ingredient provide longer duration of protection, regardless of the active ingredient, although concentrations above ~50% do not offer a marked increase in protection time. Products with <10% active ingredient may offer only limited protection, often from 1-2 hours. Products that offer sustained release or controlled release (micro-encapsulated) formulations, even with lower active ingredient concentrations, may provide longer protection times. Regardless of what product you use, if you start to get mosquito bites reapply the repellent according to the label instructions or remove yourself from the area with biting insects if possible.

These recommendations are for domestic use in the United States where EPA-registered products are readily available. See CDC Travelers’ Health website for additional recommendations concerning protection from insects when traveling outside the United States.

**Repellents for use on clothing:**

Certain products containing permethrin are recommended for use on clothing, shoes, bed nets, and camping gear, and are registered with EPA for this use. Permethrin is highly effective as an insecticide and as a repellent. Permethrin-treated clothing repels and kills ticks, mosquitoes, and other arthropods and retains this effect after repeated laundering. The permethrin insecticide should be reapplied following the label instructions. Some commercial products are available pretreated with permethrin.

**EPA recommends the following precautions when using insect repellents:**

- Apply repellents only to exposed skin and/or clothing (as directed on the product label.) Do not use repellents under clothing.
- Never use repellents over cuts, wounds or irritated skin.
- Do not apply to eyes or mouth, and apply sparingly around ears. When using sprays, do not spray directly on face—spray on hands first and then apply to face.
- Do not allow children to handle the product. When using on children, apply to your own hands first and then put it on the child. You may not want to apply to children’s hands.
• Use just enough repellent to cover exposed skin and/or clothing. Heavy application and saturation are generally unnecessary for effectiveness. If biting insects do not respond to a thin film of repellent, then apply a bit more.
• After returning indoors, wash treated skin with soap and water or bathe. This is particularly important when repellents are used repeatedly in a day or on consecutive days. Also, wash treated clothing before wearing it again. (This precaution may vary with different repellents—check the product label.)
• If you or your child get a rash or other bad reaction from an insect repellent, stop using the repellent, wash the repellent off with mild soap and water, and call a local poison control center for further guidance. If you go to a doctor because of the repellent, take the repellent with you to show the doctor.

Note that the label for products containing oil of lemon eucalyptus specifies that they should not to be used on children under the age of three years. Other than those listed above, EPA does not recommend any additional precautions for using registered repellents on children or on pregnant or lactating women. For additional information regarding the use of repellent on children, please see CDC’s Frequently Asked Questions about Repellent Use. [http://www.cdc.gov/ncidod/dvbid/westnile/qa/insect_repellent.htm]

DEET-based repellents applied according to label instructions may be used along with a separate sunscreen. No data are available at this time regarding the use of other active repellent ingredients in combination with a sunscreen.


* Note: This recommendation refers to EPA-registered repellent products containing the active ingredient oil of lemon eucalyptus (or PMD). “Pure” oil of lemon eucalyptus (e.g. essential oil) has not received similar, validated testing for safety and efficacy, is not registered with EPA as an insect repellent, and is not covered by this CDC recommendation.

References:


Thavara U et al. Laboratory and field evaluations of the insect repellents 3535 (ethyl butyletyaminopropionate) and DEET against mosquito vectors in Thailand. J of Am Mosq Cont Assoc. 2001, 17(3):190-195

For more information, visit [www.cdc.gov/westnile](http://www.cdc.gov/westnile), or call CDC at 800-CDC-INFO (English and Spanish) or 888-232-6348 (TTY).

Page last modified August 6, 2012
Questions and Answers

Prevention

Q. What can I do to reduce my risk of becoming infected with West Nile virus?

A. Here are preventive measures that you and your family can take:

Protect yourself from mosquito bites:

- Apply insect repellent to exposed skin. Generally, the more active ingredient a repellent contains the longer it can protect you from mosquito bites. A higher percentage of active ingredient in a repellent does not mean that your protection is better—just that it will last longer. Click here for more on insect repellent active ingredients. Choose a repellent that provides protection for the amount of time that you will be outdoors.
  - Repellents may irritate the eyes and mouth, so avoid applying repellent to the hands of children.
  - Whenever you use an insecticide or insect repellent, be sure to read and follow the manufacturer's DIRECTIONS FOR USE, as printed on the product.
  - For detailed information about using repellents, see the Insect Repellent Use and Safety questions.
- Spray clothing with repellents containing permethrin or another EPA-registered repellent since mosquitoes may bite through thin clothing. Do not apply repellents containing permethrin directly to exposed skin. Do not apply repellent to skin under your clothing.
- When weather permits, wear long-sleeved shirts and long pants whenever you are outdoors.
- Place mosquito netting over infant carriers when you are outdoors with infants.
- Consider staying indoors at dawn, dusk, and in the early evening, which are peak mosquito biting times.
- Install or repair window and door screens so that mosquitoes cannot get indoors.

Help reduce the number of mosquitoes in areas outdoors where you work or play, by draining sources of standing water. In this way, you reduce the number of places mosquitoes can lay their eggs and breed.

- At least once or twice a week, empty water from flower pots, pet food and water dishes, birdbaths, swimming pool covers, buckets, barrels, and cans.
- Check for clogged rain gutters and clean them out.
- Remove discarded tires, and other items that could collect water.
- Be sure to check for containers or trash in places that may be hard to see, such as under bushes or under your home.

Note: Vitamin B and "ultrasonic" devices are NOT effective in preventing mosquito bites.

Kids can learn how to protect themselves from mosquito bites on "The Buzz-z-z-z on West Nile Virus" (on BAM!, the CDC site for kids).

Q. What can be done to prevent outbreaks of West Nile virus?

A. Prevention and control of West Nile virus and other arboviral diseases is most effectively
accomplished through integrated vector management programs. These programs should include surveillance for West Nile virus activity in mosquito vectors, birds, horses, other animals, and humans, and implementation of appropriate mosquito control measures to reduce mosquito populations when necessary. Additionally, when virus activity is detected in an area, residents should be alerted and advised to increase measures to reduce contact with mosquitoes. Details about effective prevention and control of West Nile virus can be found in CDC's Guidelines for Surveillance, Prevention, and Control (286 KB, 111 pages).

Q. Is there a vaccine against West Nile encephalitis?

A. No, but several groups are working towards developing a vaccine.

Q. Where can I get information about the use of pesticide sprays that are being used for mosquito control?

A. The federal agency responsible for pesticide evaluation is the Environmental Protection Agency (EPA). See the EPA Web site for detailed answers to the questions about pesticides used for mosquito control.

Page last modified February 25, 2010

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**Fight the Bite!**

**Avoid Mosquito Bites to Avoid Infection**

When dealing with West Nile virus, prevention is your best bet. Fighting mosquito bites reduces your risk of getting this disease, along with others that mosquitoes can carry. Take the commonsense steps below to reduce your risk:

- avoid bites and illness;
- clean out the mosquitoes from the places where you work and play;
- help your community control the disease.

**Something to remember:** the chance that any one person is going to become ill from a single mosquito bite remains low. the risk of severe illness and death is highest for people over 50 years old, although people of all ages can become ill.

**Avoid Mosquito Bites**

✅ **Use Insect Repellent**

on exposed skin when you go outdoors. Use an EPA-registered insect repellent such as those with DEET, picaridin or oil of lemon eucalyptus. Even a short time being outdoors can be long enough to get a mosquito bite. For details on when
and how to apply repellent, see Insect Repellent Use and Safety in our Questions and Answers pages. See also Using Insect Repellent Safely from the EPA.

![Get double protection: wear long sleeves during peak mosquito biting hours, and spray repellent directly onto your clothes.](image)

- **Clothing Can Help Reduce Mosquito Bites**
  - When weather permits, wear long-sleeves, long pants and socks when outdoors. Mosquitoes may bite through thin clothing, so spraying clothes with repellent containing permethrin or another EPA-registered repellent will give extra protection. Don’t apply repellents containing permethrin directly to skin. Do not spray repellent on the skin under your clothing.

- **Be Aware of Peak Mosquito Hours**
  - The hours from dusk to dawn are peak biting times for many species of mosquitoes. Take extra care to use repellent and protective clothing during evening and early morning -- or consider avoiding outdoor activities during these times.

- **Mosquito-Proof Your Home**
  - **Drain Standing Water**
    - Mosquitoes lay their eggs in standing water. Limit the number of places around your home for mosquitoes to breed by getting rid of items that hold water. Need examples? Learn more on the Prevention of West Nile Virus Question and Answer page.

  ![Drain standing water from around your home](image)

  - **Install or Repair Screens**
    - Some mosquitoes like to come indoors. Keep them outside by having well-fitting screens on both windows and doors. Offer to help neighbors whose screens might be in bad shape.

- **Help Your Community**
  - **Report Dead Birds to Local Authorities**
    - Dead birds may be a sign that West Nile virus is circulating between birds and the mosquitoes in an area.
Over 130 species of birds are known to have been infected with West Nile virus, though not all infected birds will die. It's important to remember that birds die from many other causes besides West Nile virus.

By reporting dead birds to state and local health departments, you can play an important role in monitoring West Nile virus. State and local agencies have different policies for collecting and testing birds, so check the Links to State and Local Government Sites page to find information about reporting dead birds in your area. Click here for more info about reporting dead birds and dealing with bird carcasses.

✔️ Mosquito Control Programs
Check with local health authorities to see if there is an organized mosquito control program in your area. If no program exists, work with your local government officials to establish a program. The American Mosquito Control Association can provide advice, and their book Organization for Mosquito Control is a useful reference.

A report overview of Public Health Confronts the Mosquito: Sustainable State and Local Mosquito Control Programs by the Association of State and Territorial Health Officials is located on this website, including "what you can do" about mosquito control. The entire final report from the Mosquito Control Collaborative is also online.

More questions about mosquito control? A source for information about pesticides and repellents is the National Pesticide Information Center, which also operates a toll-free information line: 1-800-858-7378 (check their Web site for hours).

✔️ Clean Up
Mosquito breeding sites can be anywhere. Neighborhood clean up days can be organized by civic or youth organizations to pick up containers from vacant lots and parks, and to encourage people to keep their yards free of standing water. Mosquitoes don't care about fences, so it's important to control breeding sites throughout the neighborhood.

✔️ Find out more about local prevention efforts
Find state and local West Nile virus information and contacts on the Links to State and Local Government Sites page.

Date last modified: November 2, 2007
Content source:
Division of Vector Borne Infectious Diseases
National Center for Zoonotic, Vector-Borne, and Enteric Diseases
In The News…

**West Nile widow loses husband of 65 years**

Betty Best’s husband among spiking virus victims this year

UPDATED 10:50 PM CDT Aug 15, 2012


**Oklahoma Reports First West Nile Death**

Posted on: 5:05 pm, August 10, 2012, by Alicia Agent, updated on: 08:59pm, August 10, 2012


**West Nile Cases Increase in Oklahoma**

Posted on: 11:49 am, August 14, 2012, by 5NEWS Web Staff, updated on: 03:22pm, August 14, 2012

Read more: [http://5newsonline.com/2012/08/14/west-nile-cases-increase-in-oklahoma/](http://5newsonline.com/2012/08/14/west-nile-cases-increase-in-oklahoma/)